

AMENDMENTS TO THE CLAIMS

1. (Currently Amended): A device, comprising:

a database of stored radio frequency identifiers and radio frequency information corresponding thereto; and

a processor coupled to the database and operating one or more algorithms for comparing a decoded radio frequency identifier and a comparison radio frequency identifier selected from the stored radio frequency identifiers in the database and for generating a display signal based on the comparison;

wherein the database of stored radio frequency identifiers is accessed as a function of a radio frequency signal and a position signal indicative of a location of the device, and the display signal is one of a signal indicative of a correspondence and a divergence between the decoded radio frequency identifier and the comparison radio frequency identifier, and

wherein the display signal that identifies that the decoded radio frequency signal identifier diverging from the comparison radio frequency identifier further identifies one of that a radio frequency signal identifier was not decoded, and that the decoded radio frequency signal identifier does not correspond to the comparison radio frequency identifier; and

a display coupled to the processor and the database, the display structured to display the radio frequency information in response to the display signal indicative of a correspondence between the decoded radio frequency identifier and the comparison radio frequency identifier, the display further structured to display caution information in response to the display signal indicative of a divergence between the decoded radio frequency identifier and the stored radio frequency identifier.

2. (Canceled).

3. (Original) The device recited in claim 1, further comprising a memory device having the database stored therein.

4. (Original) The device recited in claim 1 wherein the one or more algorithms operated by processor includes one or more algorithms for generating the decoded radio frequency identifier by decoding a coded radio frequency identifier.

5. (Original) The device recited in claim 4 wherein the coded radio frequency identifier is coded in Morse.

6. (Canceled).

7. (Canceled).

8. (Canceled).

9. (Canceled).

10. (Currently Amended): A device, comprising:
a means for storing radio frequency information as a function of different radio frequency identifiers;

a means for interrogating the storing means as a function of a predetermined radio frequency and a current position of the device to select one of the stored radio frequency identifiers;

a means for comparing a decoded radio frequency identifier and the selected one of the stored radio frequency identifiers;

a means for generating a comparison signal as a function of the comparing the decoded radio frequency identifier and the selected one of the stored radio frequency identifiers,

wherein the comparison signal is a signal that identifies one of
the decoded radio frequency signal identifier corresponding to the selected
one of the stored radio frequency identifiers, and the decoded radio frequency
signal identifier diverging from the selected one of the stored radio frequency
identifiers, and
wherein the comparison signal further identifies one of

that a radio frequency signal identifier was not decoded, and that the decoded radio frequency signal identifier does not correspond to the selected one of the stored radio frequency identifiers;

means for interrogating the storing means as a function of the predetermined radio frequency to select radio frequency information; and

means for displaying the selected radio frequency information, including one of the selected radio frequency information and warning information as a function of the comparison signal

11. (Canceled)

12. (Previously Presented) The device recited in claim 10 wherein the means for interrogating the storing means as a function of the predetermined radio frequency to select radio frequency information includes means for interrogating the storing means as a function of a position signal to select the radio frequency information.

13. (Previously Presented) The device recited in claim 10, further comprising means for decoding a coded radio frequency signal identifier to determine the decoded radio frequency identifier.

14. (Previously Presented) The device recited in claim 13 wherein the coded radio frequency signal identifier is coded in Morse.

15. (Canceled)

16. (Canceled)

17. (Previously Presented) The device recited in claim 10 wherein the means for interrogating the storing means as a function of a predetermined radio frequency to select one of the stored radio frequency identifiers includes means for interrogating the storing means as a function of a position signal.

18. (Previously Presented) The device recited in claim 17, wherein the means for displaying the selected radio frequency information includes displaying the selected radio frequency information as a function of the comparison signal.

19. (Currently Amended) A display device, comprising:
a display having a first input structured to receive a radio frequency control signal and a second input coupled to receive radio frequency information, the display structured to display one of the radio frequency information and caution information in response to a signal received on a third input;

a radio receiver having a first input coupled to receive the radio frequency control signal and a second input coupled to receive a radio frequency signal having an identifier coded in Morse code, the radio receiver outputting the coded identifier;

a memory device having a first input coupled to receive the radio frequency control signal and a second input coupled to receive a position signal, the memory device having a circuit for correlating the radio frequency control signal and the position signal with a database of radio frequency identifiers to select and output on a first output one of the radio frequency identifiers and to select and output on a second output coupled to the second input of the display radio frequency information corresponding to the selected one of the radio frequency identifiers; and

a processor having a first input coupled to receive the output of the radio receiver to receive the coded identifier and a second input coupled to the output of the memory device to receive the selected one of the radio frequency identifiers, the processor operating one or more algorithms for decoding the coded identifier, for comparing the decoded identifier with the selected one of the radio frequency identifiers, and for generating a signal on an output coupled to the third input of the display as a function of the comparing, wherein the signal generated by the processor as a function of the comparing the decoded identifier with the selected one of the radio frequency identifiers is one of

a signal indicative of a correspondence and a divergence between the decoded identifier and the selected one of the radio frequency identifiers,
wherein the signal is a signal that identifies one of

the decoded identifier corresponding to the selected one of the radio frequency identifiers, and the decoded identifier diverging from the selected one of the radio frequency identifiers, and wherein the signal further identifies one of that an identifier was not decoded, and that the decoded identifier does not correspond to the selected one of the radio frequency identifiers, and

wherein the display is structured to display caution information in response to the signal indicative of a divergence between the decoded identifier and the selected one of the radio frequency identifiers.

20. (Canceled)

21. (Canceled)

22. (Previously Presented) The device recited in claim 19 wherein the display is structured to display the radio frequency information corresponding to the selected one of the radio frequency identifiers in response to the signal indicative of a correspondence between the decoded identifier and the selected one of the radio frequency identifiers.

23. (Canceled).

24. (Previously Presented) The device recited in claim 19, further comprising a radio frequency input device coupled to the first input of the display for inputting the radio frequency control signal.

25. (Currently Amended) A method for displaying a radio frequency identifier, comprising:

receiving a radio frequency control signal indicating a radio frequency;
receiving a radio frequency signal corresponding to the indicated radio frequency;
locating in an onboard database database information corresponding to a facility closest to a present position of an aircraft using the indicated radio frequency;

locating in the onboard database database information corresponding to the closest facility;

displaying the located database information;

determining a correspondence between the database information and the received radio frequency signal;

generating a signal as a function of the correspondence between the database information and the received radio frequency signal,

wherein the signal is a signal that identifies one of

the received radio frequency signal corresponding to the database information, and the received radio frequency signal diverging from the database information, and

wherein the signal further identifies one of

that a radio frequency signal was not received, and that the received radio frequency signal does not correspond to the database information; and

altering one or more of a color and a text of the displayed database information in response to the generated signal.

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Original) The method recited in claim 25, further comprising entering the radio frequency control signal.

30. (Original) The method recited in claim 25 wherein: the received radio frequency signal is a coded signal; and further comprising decoding the coded signal.

31. (Currently Amended) A method for controlling the display of information, comprising:

receiving a decoded coded signal from a radio navigation station;

correlating the decoded signal to a known radio navigation station to produce a correlation signal;

identifying one of the decoded signal corresponding to the known radio navigation station, and the decoded signal diverging from the known radio navigation station;

identifying one of that a signal was not decoded, and that the decoded signal does not correspond to the known radio navigation station;

retrieving information corresponding to the known radio navigation station from a database of stored information;

making the retrieved information available on an output from the database;

displaying the retrieved information; and

altering the displayed information as a function of the correlation signal ~~correlating the decoded signal to a known radio navigation station~~, including altering the displayed information to indicate one of a positive correlation and a negative correlation.

32. (Original) The method recited in claim 31 wherein correlating the decoded signal to a known radio navigation station includes correlating the decoded signal as a function of a current position signal.

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Previously Presented) The method recited in claim 31 wherein displaying the retrieved information includes displaying the retrieved information on a color display.

37. (Original) The method recited in claim 31 further comprising decoding the coded signal.

38. (Original) The method recited in claim 37 wherein the coded signal is coded in Morse.

39. (Currently Amended) A method controlling the display of information, comprising:

storing radio frequency information as a function of different radio frequency identifiers;
interrogating the stored radio frequency information as a function of a predetermined radio frequency and a positional signal to select one of the stored radio frequency identifiers;
comparing a decoded radio frequency identifier and the selected one of the stored radio frequency identifiers;

generating a comparison signal as a function of the comparing the decoded radio frequency identifier and the selected one of the stored radio frequency identifiers;

interrogating the stored radio frequency information as a function of the predetermined radio frequency to select radio frequency information;

identifying one of the decoded radio frequency identifier corresponding to the selected one of the stored radio frequency identifiers, and the decoded radio frequency identifier diverging from the selected one of the stored radio frequency identifiers, and

identifying one of that a radio frequency identifier was not decoded, and that the decoded radio frequency identifier does not correspond to the selected one of the stored radio frequency identifiers; and

displaying selected radio frequency information or warning information as a function of the comparison signal.

40. (Canceled).

41. (Previously Presented) The method recited in claim 39 wherein interrogating the stored radio frequency information as a function of the predetermined radio frequency to select radio frequency information includes interrogating the stored radio frequency information as a function of a position signal to select the radio frequency information.

42. (Previously Presented) The method recited in claim 39, further comprising decoding a coded radio frequency signal identifier to determine the decoded radio frequency identifier.

43. (Previously Presented) The method recited in claim 42 wherein the coded radio frequency signal identifier is coded in Morse.

44. (Canceled)

45. (Canceled)

46. (Previously Presented) The method recited in claim 39 wherein interrogating the stored radio frequency information as a function of a predetermined radio frequency to select one of the stored radio frequency identifiers includes interrogating the stored radio frequency information as a function of a position signal.

47. (Previously Presented) The method recited in claim 46, further comprising displaying the selected radio frequency information as a function of the comparison signal.

48. (Previously Presented) A Morse radio frequency signal identifier decoder, comprising:

- a down-sampler quadrature filter bank coupled to receive a detected Morse radio frequency signal having a coded identifier and structured to convert a received signal into an in-phase signal and a quadrature-phase signal and reduce the sampling frequency to a predetermined level;

- a pair of down-sampler/multi-stage modulated filter banks coupled to the down-sampler quadrature filter bank and structured to filter respective in-phase and quadrature signals into a predetermined plurality of filter components and to further reduce the sampling frequency;

- a confidence presence detector coupled to the pair of down-sampler/multi-stage modulated filter banks and structured to search across the plurality of filter components to predict which of the filter banks contains an identification string of a detected radio signal;

a viterbi most-likely sequence estimator coupled to the presence detector and structured to operate a most-likely sequence estimator on outputs of the presence detector; and

a Morse symbol decoder coupled to the viterbi most-likely sequence estimator and structured to convert a series of 1's and 0's into an estimate of dot, dash, space and word locations in a detected signal;

a correlator circuit receiving an output of the Morse symbol decoder and a predicted Morse code radio frequency identifier, the correlator circuit structured to correlate the output of the Morse symbol decoder with the predicted Morse code radio frequency identifier to determine whether the detected VHF radio frequency signal identifier corresponds to the predicted identifier;

a threshold estimator circuit coupled to receive the predicted Morse code radio frequency identifier and structured to estimate a signal energy in the predicted Morse code radio frequency identifier;

a comparator coupled to receive the respective outputs of the correlator circuit and the threshold estimator circuit and structured to determine the signal energy in a detected Morse radio frequency signal identifier relative to the threshold estimate of the signal energy in the predicted Morse code radio frequency identifier;

a circuit structured to generate a display signal as a function of a determination of the signal energy in the detected Morse radio frequency signal identifier relative to the threshold estimate of the signal energy in the predicted Morse code radio frequency identifier,

wherein the display signal is a signal that identifies one of the detected Morse radio frequency signal identifier corresponding to the predicted Morse code radio frequency identifier, and the detected Morse radio frequency signal identifier diverging from the predicted Morse code radio frequency identifier, and

wherein the display signal that identifies that the detected Morse radio frequency signal identifier diverging from the predicted Morse code radio frequency identifier further identifies one of that a Morse radio frequency signal identifier was not detected, and that the detected Morse radio frequency signal identifier does not correspond to the predicted Morse code radio frequency identifier.

49. (Original) The decoder recited in claim 48 wherein the detected signal received in the down-sampler quadrature filter bank is an analog radio frequency signal converted to a digital signal.

50. (Original) The decoder recited in claim 48, further comprising an analog-to-digital signal converter structured to convert the detected Morse radio frequency signal from an analog signal to a digital signal.

51. (Canceled)

52. (Previously Presented) The decoder recited in claim 48 wherein the predicted Morse code radio frequency identifier is derived from a database of stored radio frequency identifiers.

53. (Canceled)

54. (Canceled)

55. (Canceled)

56. (Canceled)

57. (Canceled)

58. (Original) The decoder recited in claim 48 wherein the viterbi most-likely sequence estimator is further structured to operate a most-likely sequence estimator on outputs of the presence detector as a function of a predetermined state chart.

59. (Previously Presented) A Morse radio frequency signal identifier decoder, comprising:

a means for converting a detected Morse radio frequency signal having a coded identifier into an in-phase signal and a quadrature-phase signal and reducing the sampling frequency to a predetermined level;

a means for filtering the respective in-phase and quadrature signals into a predetermined plurality of filter components and to further reducing the sampling frequency;

a means for searching across the plurality of filter components to predict which of the filter banks contains an identification string of a detected radio signal;

a means for operating a most-likely sequence estimator on outputs of the searching means; and

a means for converting a series of 1's and 0's into an estimate of dot, dash, space and word locations in a detected signal;

a means for correlating an output of the estimate of dot, dash, space and word locations in a detected signal with a predicted Morse code radio frequency identifier and determining whether the identifier of a detected Morse radio frequency signal corresponds to the predicted identifier;

a means for determining the signal energy in a detected Morse radio frequency signal identifier relative to a threshold estimate of the signal energy in the predicted Morse code radio frequency identifier; and

a means for generating a caution display signal when the signal energy in the detected Morse radio frequency signal identifier does not correlate to the threshold estimate of the signal energy in the predicted Morse code radio frequency identifier.

60. (Original) The decoder recited in claim 59, further comprising a means for converting a detected analog Morse radio frequency signal having a coded identifier into a digital signal and outputting the digital signal to the means for converting the signal into an in-phase signal and a quadrature-phase signal and reducing the sampling frequency to a predetermined level.

61. (Canceled)

62. (Previously Presented) The decoder recited in claim 59, further comprising a means for deriving the predicted Morse code radio frequency identifier from a database of stored radio frequency identifiers.

63. (Previously Presented) The decoder recited in claim 59, further comprising a means for estimating a signal energy in the predicted Morse code radio frequency identifier.

64. (Canceled)

65. (Canceled)

66. (Previously Presented) A method for decoding an identification string in a Morse coded radio frequency signal, the method comprising:

converting a detected Morse coded radio frequency signal having an identification string into an in-phase signal and a quadrature-phase signal and reducing the sampling frequency to a predetermined level;

filtering the respective in-phase and quadrature signals into a predetermined plurality of filter components and to further reducing the sampling frequency;

searching across the plurality of filter components and predicting which of the filter banks contains an identification string of a detected radio signal;

operating a most-likely sequence estimator on outputs generated by the searching across the plurality of filter components and predicting which of the filter banks contains an identification string of a detected radio signal; and

converting a series of 1's and 0's into an estimate of dot, dash, space and word locations in a detected signal;

correlating the estimate of dot, dash, space and word locations in an identification string of a detected signal with a predicted Morse code radio frequency identification string and determining whether the identification string of a detected signal corresponds to the predicted identification string;

determining the signal energy in a detected identification string relative to a threshold estimate of the signal energy in the predicted identification string; and

generating a caution display signal when the signal energy in the detected identification string does not correspond to the threshold estimate of the signal energy in the predicted identification string

67. (Original) The method recited in claim 66, further comprising converting at least an identification string in a detected analog Morse coded radio frequency signal into a digital signal prior to converting the detected radio frequency signal into an in-phase signal and a quadrature-phase signal and reducing the sampling frequency to a predetermined level.

68. (Canceled)

69. (Previously Presented) The method recited in claim 66, further comprising deriving the predicted identification string from a database of stored identification strings.

70. (Previously Presented) The method recited in claim 66, further comprising estimating a signal energy in the predicted identification string.

71. (Canceled)

72. (Canceled)

73. (Previously Presented) The device recited in claim 1, wherein the database and processor are configured to be mobile.